

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF AIR RESOURCES
AIR POLLUTION CONTROL REGULATION NO. 25**

**CONTROL OF VOLATILE ORGANIC COMPOUND EMISSIONS
FROM CUTBACK AND EMULSIFIED ASPHALT**

25. Control of Volatile Organic Compound Emissions from Cutback and Emulsified Asphalt

25.1 Definitions

As used in these regulations, the following terms shall, where the context permits, be construed as follows:

- 25.1.1 "Asphalt" means a dark brown cementitious material which is solid, semisolid, or liquid in consistence and in which the predominating constituents are bitumens that occur in nature or which are obtained as residue in refining petroleum.
- 25.1.2 "Chip seal" or "Aggregate seal" means a single application of liquefied asphalt to an existing paved surface followed by a single layer of aggregate.
- 25.1.3 "Cutback asphalt" means asphalt cement that has been liquefied by blending with petroleum solvents (diluent).
- 25.1.4 "Dense-graded aggregate" means a dense aggregate containing sand, stone and fines which has small void spaces, resulting in a compacted mixture.
- 25.1.5 "Emulsified asphalt" means an emulsion of asphalt cement and water that contains a small amount of an emulsifying agent.
- 25.1.6 "Halogenated organic compound" and "HOC" means the following compounds:
 - (a) CFC-11 (trichlorofluoromethane)
 - (b) CFC-12 (dichlorodifluoromethane)

- (c) CFC-113 (1,1,1-trichloro 2,2,2-trifluoroethane)
- (d) CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
- (e) CFC-115 (chloropentafluoroethane)
- (f) HCFC-22 (chlorodifluoromethane)
- (g) HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
- (h) HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)
- (i) HCFC-141b (1,1-dichloro 1-fluoroethane)
- (j) HCFC-142b (1-chloro 1,1-difluoroethane)
- (k) methyl chloroform (1,1,1-trichloroethane)
- (l) methylene chloride (dichloromethane)

- 25.1.7 "Long life stockpile storage" means the storage of cutback asphalt paving mixtures for 30 days or longer.
- 25.1.8 "Medium curing cutback asphalt" means a cutback asphalt composed of asphalt cement and a kerosene-type diluent of medium volatility, which meets the specifications of the American Society for Testing and Materials (ASTM) Designation D-2027 for Medium-Curing Asphalt, or the American Association of State Highway and Transportation Officials (AASHTO) Designation M82.
- 25.1.9 "Open-graded aggregate" means aggregate containing little or no mineral filler or in which the void spaces in the compacted aggregate are large.
- 25.1.10 "Penetrating Prime Coat" means the application of low-viscosity liquid asphalt to an absorbent base surface prior to applying an asphalt surface.
- 25.1.11 "Sand seal" means a single application of liquefied asphalt to an existing paved surface followed by a single layer of fine aggregate.
- 25.1.12 "Seal coat" means a thin liquified asphalt surface treatment used to waterproof and improve the texture of an asphaltwearing surface.
- 25.1.12 "Volatile organic compound" and "VOC" means any organic which participates in atmospheric photochemical reactions. This includes any organic compound other than the following compounds:

- (a) acetone
- (b) CFC-11 (trichlorofluoromethane)
- (c) CFC-12 (dichlorodifluoromethane)
- (d) CFC-113 (1,1,1-trichloro 2,2,2-trifluoroethane)
- (e) CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
- (f) CFC-115 (chloropentafluoroethane)
- (g) ethane
- (h) HCFC-22 (chlorodifluoromethane)
- (i) HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
- (j) HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)
- (k) HCFC-141b (1,1-dichloro 1-fluoroethane)
- (l) HCFC-142b (1-chloro 1,1-difluoroethane)
- (m) HFC-23 (trifluoromethane)
- (n) HCFC-125 (pentafluoroethane)
- (o) HCFC-134 (1,1,2,2-tetrafluoroethane)
- (p) HFC-134a (1,1,1,2-tetrafluoroethane)
- (q) HCFC-143a (1,1,1-trifluoroethane)
- (r) HCFC-152a (1,1-difluoroethane)
- (s) methane
- (t) methyl chloroform (1,1,1-trichloroethane)
- (u) methylene chloride (dichloromethane)
- (v) parachlorobenzotrifluoride (PCBTF)
- (w) volatile methyl siloxanes (VMS)
- (x) The perfluorocarbon compounds which fall into these classes:

- (1) cyclic, branched or linear, completely fluorinated alkanes;
- (2) cyclic, branched or linear, completely fluorinated ethers with no unsaturations;
- (3) cyclic, branched or linear, completely fluorinated tertiary amines with no unsaturations; and
- (4) sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

These compounds have been determined to have negligible photochemical reactivity. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds with negligible photochemical reactivity as defined above, an owner or operator may exclude these negligible photochemical reactive compounds when determining compliance with an emissions standard. Exempt solvents will

be treated as water in "pounds of VOC per gallon of coating minus water" calculations.

25.2 Applicability

25.2.1 The provisions of this regulation shall apply to any person, stationary source, facility or municipality which manufactures, stores, mixes, uses or applies asphalt for road paving or repairs. The provisions of this regulation shall not apply to the manufacture of asphalt products exclusively for use outside of the State of Rhode Island.

25.2.2

25.3 Prohibitions

25.3.1 No person shall cause, allow or permit the manufacture, mixing, storage, use or application of cutback asphalt between 1 May and 14 October, except for the manufacture and use of medium curing cutback asphalt in patching mixtures for pavement repairs when long life stockpile storage is necessary and, with written approval of the Director, for the application of a penetrating prime coat. Medium curing cutback asphalt used for the manufacture of patching mixtures or as a penetrating prime coat shall have less than 5 percent (5%) of the total solvent evaporate at a temperature up to and including 500°F.

25.3.2 No person shall cause, allow or permit the manufacture, mixing, storage use or application of cutback asphalt between 15 October and 30 April except in the following circumstances:

- (a) The use of medium curing cutback asphalt solely as a penetrating prime coat, or
- (b) The use of medium curing cutback asphalt for the manufacture and use of patching mixtures for pavement repairs when long life stockpile storage is necessary, or
- (c) The use of medium curing cutback asphalt of which less than 5 percent (5%) of the total solvent evaporates at a temperature up to and including 500°F.

25.3.3 No person shall cause, allow or permit the manufacture, mixing,

storage, use or application of emulsified asphalt which has been diluted with a petroleum solvent or another VOC or which has a VOC content greater than the limits specified in Subsection 25.3.4 between 1 May and 14 October.

- 25.3.4 The VOC content of any emulsified asphalt manufactured, mixed, stored, used or applied between 15 October and 30 April shall be limited as follows:

		Maximum VOC
Application/Use		Content-Percent (by wt.)
(a)	Use as a seal coat	3
(b)	Use as a chip seal when dusty or dirty aggregate is used	3
(c)	Mixing with open graded aggregate that is not well washed	8
(d)	Mixing with dense graded aggregate	12

25.4 Test Methods

- 25.4.1 Compliance with subsections 25.3.1 and 25.3.2(c) shall be demonstrated using ASTM Method D-402, "Distillation of Cut-Back Asphaltic Product" (or another method approved by the Director and EPA).
- 25.4.2 Compliance with section 25.3.4 shall be demonstrated using ASTM Method D-244, "Standard Test Methods for Emulsified Asphalts", (or another method approved by the Director and EPA).

25.5 Recordkeeping

The owner or operator of any facility subject to this regulation shall maintain records of the manufacture, mixing, storage, use or application of any asphalt which contains VOC between 1 May and 14 October. These records shall be maintained in a readily accessible locations for a minimum of three years and shall be made accessible to the Division upon

request.

25.6 Compliance schedule

Compliance with the provisions of this regulation shall be required on and after 1 May 1994.